variation (standard deviation of 1.1). The innovations had a moderate usefulness on wearable health technologies (mean of 3.9) and led to some variation (standard deviation of 1.2).

Chandler and Redman (2012) argue that information communication technology innovations are a continuous process that arises from vigorous research and development endeavors by scholars. The authors claim that endeavors in turn culminate in the production of effective and efficient information systems aimed at enhancing service delivery in healthcare facilities across the world. It requires the use of computers and mobile technology enabled devices. The argument shows that there is inseparable relationship between computers and information communication technology networks as well as mass media which include television sets used to pass information. The introduction of blockchain technology in healthcare Information Communication technology is geared towards exchange of vital information while ensuring high integrity and protection of patients' confidential data during information sharing. This new innovation will empower the users and enable them achieve their goals in health (Engelhardt 2017). According to Asif-Ur-Rahman, Afsana, Mahmud, Kaiser, Ahmed, Kaiwartya and Taylor (2018) there is need to adopt an heterogeneous cloud-based information communication technology powered by mist and fog computing and the internet. It will provide efficient conventional and real-time data exchange for useful healthcare service delivery. Jungwirth and Haluz (2019) argue that Smartphone apps are the major tools for healthcare service delivery. Using these Information Communication technology tools; patients can access a wide range of health and fitness services. The technology empowers users to monitor their health while benefiting from collaborative quality health services. According to Zonneveld, Patomella, Asaba and Guidetti (2020), healthcare service delivery achieves optimum results when Information Communication Technology systems are put into use. Th scholar argues that technology intervention in healthcare promotes consistency and improves participation of patients setting up and working towards attaining their health goals. The adoption of the technology helps healthcare organizations to reach out and serve a larger population as compared to face-to-face manual system.

Table 3: Telemedicine and Health care service delivery
This section indicates the level of agreement by respondents on telemedicine.

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
Teleconferencing has enhanced collaboration with international experts and stakeholders for improved service delivery	27.2	68.0	1.8	3.0	-	4.2	0.6
Teleconsultations use has promoted convenience during service delivery	45.6	46.7	7.7	-	-	4.4	0.6
Remote patient monitoring is key towards improved responsiveness to patients' medical needs.	63.9	32.5	1.2	2.4	-	4.6	0.6
Medical imaging using Telemedicine is reliable	17.8	52.7	25.4	3.0	1.2	3.8	0.8
Average	**38.6**	**50.0**	**9.0**	**2.1**	**0.3**	**4.3**	**0.7**

Source: Research data (2020)

Table 3 shows that collaboration with international experts and stakeholders led to improved service delivery as a result of teleconferencing (mean of 4.2) which caused little variation (standard deviation of 0.6). Teleconsultation use has promoted convenience during service delivery (mean of 4.4) whose variation was low (standard deviation of 0.6). Remote patient monitoring is key towards improved responsiveness to patients' medical needs (mean of 4.6) but the variation in responsiveness was low (standard of deviation 0.6) Medical imaging using telemedicine is reliable (mean of 3.8) with insignificant variation in reliability (standard deviation of 0.8).

Chetley, Davies, Trude, McConnell and Ramirez (2006) explain that telemedicine can be best reliable and cost effective way for the developed nations can use to reach out and aid the healthcare systems of poor countries across the world. There is a significant contribution of Teleconsultation to improved service delivery in healthcare management. The use of Telecommunication for information monitoring and exchange via emails, mobile phones and automated messaging services has led to significant improvement in healthcare service delivery. Video conferencing acts as a link between healthcare providers with their clients simultaneously through healthcare education. The equipment used in teleconferencing include television, digital camera, webcam and videophone among others (Verhoeven, Dijkstra, Nijland, Eysenbach and Pijnen, 2010). Telemedicine was established jointly by the Government and German Merck which aimed at enabling the rural areas access quality healthcare services through the use of Teleconferencing (Qin, Dzombak, Amin and Mehta 2013). About 100,000 Euros was invested in the program in the initial phase linking the medical experts at Kenyatta National Hospital to Machakos level four hospital, all in Kenya. The technology aimed at boosting research and development and provided a strong foundation for pharmacovigilance, community awareness and healthcare education.

According to Holmes, Suffian, Lackey and Mehta (2014) networked health Solutions improves access to pre-primary health services. In addition the network provides personal health information tracking, and opportunities for income-generation to women in rural Kenya through telemedicine. According to Wasonga (2015), telemedicine can be put in two categories; real-time and pre-recorded diagnosis, treatment and prevention of ailments from a distance. Kangethe, (2018) concludes that telemedicine enables patients to carry out self-monitoring , disease management and improvement in adherence to medication. Kamotho and Bukachi, (2020) explains that telemedicine implemented in rural Africa led to improved blood pressure monitoring, effective treatment and patients' management resulting in promotion of universal healthcare provision. According to Dodoo, Al-Samarraie and Alzahrani (2021) the wide adoption of telemedicine in health care service delivery across the Sub-Saharan Africa, is yet to be fully utilized in the fight against Covid-19.The current study findings enable the researchers to recommend use of telemedicine in health care service delivery because it facilitates exchange of information between patients and healthcare providers.

Table 4: Use of Mobile Health during Health care Service Delivery

Statement	Strongly Agree	Agree	Moderate /neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
Use of cell phones to communicate with patients is convenient	32.5	33.1	33.7	0.6	-	4.0	0.8
There is improved efficiency in use of tablets to communicate healthcare information with patients	27.2	39.6	33.1	-	-	3.9	0.8
Personal digital assistants facilitates teamwork among hospital staff	42.0	43.2	10.7	3.6	0.6	4.2	0.8
Mobile computers are efficient to use for service delivery	52.1	46.2	1.2	0.6	-	4.5	0.6
Mobile health improves service delivery in this hospital	46.7	50.3	2.4	-	0.6	4.4	0.6
Average	**40.1**	**42.5**	**16.2**	**0.9**	**0.2**	**4.2**	**0.7**

Source: **Research data (2020)**

Findings revealed that use of cell phones to communicate with patients is convenient (mean of 4.0) but led to low variation in communication (Standard deviation of 0.8). There is moderate efficiency in use of tablets for communicating healthcare information to patients (mean of

3.9) though a low variation in information (Standard deviation of 0.8). Personal digital assistants largely facilitate teamwork among hospital staff (mean of 4.2) but cause little variation on teamwork (Standard deviation of 0.8). Mobile computers are efficient to use for service delivery (mean of4.5) with a small variation (standard deviation of 0.6). Mobile health to a large extent improves service delivery in hospitals (mean of 4.4) whose variation was low (Standard deviation of 0.6).

Cole-Lewis and Kershaw (2010) argue that Mobile health initiative which is instrumental in care and treatment of patients is an emerging information communication technology strategy being adopted globally by several healthcare facilities. The authors affirm that M-health field is accruing evidence that technology integration within the health sector has great potential to promote better health communication. The scholars claim that the technology influence positive healthy lifestyle, improve decision making by health professionals and clients, and enhance healthcare quality by improving access to health information and communication where this was previously not possible. There is ample evidence in the scholarly literature that demonstrates the usefulness of information communication technology tools such as M-health interventions (Telemedicine, web-based strategies, email, mobile phones, mobile applications, text messaging and monitoring sensors) in reducing adverse effects of diabetes and hypertension in developed countries (Vodopivec,Jamsek, De Jongh, Gurol,Urganci, Atun and Car, 2012).According to Free, Philiphs, Watson, Galli, Felix and Edwards (2013) mobile health involves the use of mobile devices such as cell phones, smart phones and tablets, under a global network to deliver health services and information. According to Leach-Lemens (2013) use of short message services (SMS) phenomenally improves the rate of early infant diagnosis (EID) amongst those pregnant mothers infected with Human-Immuno deficiency Virus. It help in prevention of mother–to-child transmission (PMTC) program in Kenya hence improves customer satisfaction. Mobile health is the use of mobile devices and global network to deliver health services and information. Mobile devices most commonly used include cell phones (feature phones, smart phones and tablets (Adibi, 2015). The successful use of M-health by medical doctors to improve health outcomes requires the institution to educate the doctors and other health team members on the benefits of M-health (Ehrlich, Chester, Kendall and Crompton (2017). The scholars advocate for the innovative use of mobile technology in healthcare practices. A strong partnership between the Dutch government, Pfizer Foundation, Care Play, Pharm Access Foundation and Safaricom has led to the introduction of M-Tiba Health wallet into the Kenyan M-Healthcare sector. Through this system, M-Pesa is used to keep donor funds and customers' accounts as well as transfer funds to accredited healthcare providers to facilitate smooth service delivery.

According to Fedele, Cushing, Fritz, Amaro and Ortega (2017) mobile health among the youth can lead to improved treatment processes when monitored closely by a qualified health practitioner as compared to low outcomes when given without caregiver. Mobile health is however influenced by individuals, family, community, and health care system domains. Zhao, Ni and Zhou (2018) observe that age affects use of mobile health services. From their study, middle age and elderly users of mobile health attach value to the ease of mobile health utility and shy away from adopting new information technology. This implies that mobile health is easily embraced by the young generation. Sim (2019) concludes that there is utility shift in use of mobile health. It is the shift from the earlier monitoring and descriptive tools to modern digital disease diagnosis, surveillance and treatment. The scholar argues that it has greatly improved healthcare service delivery despite barriers such as mobile health regulation policies, mobile health payment challenges as well as difficulty in identifying appropriate digital biomarkers.Moble health is revolutionalizing healthcare service delivery through the use of mobile health apps. Due to the emerging pandemics such as Covid-19, there is need for mobile health systems to meet the needs of patients. Schizophrenia has been widely managed

using mobile health systems. It has led to research and innovation in mobile mental health (Torous and Keshavan 2020).

Table 5: Use of Wearable Healthcare Technology during Health care Service Delivery

Statement	Strongly agree	Agree	Moderate /Neutral	Disagree	Strongly disagree	Mean	Standard Deviation
Hearing aids	66.3	9.5	14.2	8.3	1.8	4.3	1.1
Blood pressure monitors	68.6	20.1	11.2	-	-	4.6	0.7
Blood sugar monitors	50.9	47.3	0.6	0.6	0.6	4.5	0.6
Heart rate monitors	53.3	29.6	17.2	-	-	4.4	0.8
Average	**59.8**	**26.6**	**10.8**	**2.2**	**0.6**	**4.5**	**0.8**

Research data (2020)

Findings in the table 5 show that hearing aids oftenly enhance hearing (mean of 4.3) causing slight variation (standard deviation of 1.1). Wearable technologies are very useful in blood pressure monitoring (mean of 4.6) Variation in monitoring was low (Standard deviation of 0.7).The technologies are strongly useful in monitoring of blood sugar (mean of4.5) with a low variation (standard deviation of 0.6). Pacers are strongly useful in regulating heart beats (mean of 4.4) though a low variance (standard deviation of 0.8).

According to Bonato (2005) wearable health technologies help doctors monitor the heart rate, the patient's blood sugar level, the blood pressure, fever and other health indicators. These devices can be used to diagnose and treat several diseases so as to improve service delivery (Brady, Carson, O'Gorman, Moyna, and Diamond, 2006). According to Rutherford (2010) wearable healthcare technologies are spearheading a great paradigm shift in the health sector. The greatest contribution of wearable technologies delivery of healthcare services is its ability to monitor a patient's health status and gather useful information in service delivery (Chan, Esteve, Fourniols, Escriba and Campo 2012). Collier and Radolph (2015) discovered that there is a merger between fitness and wearable health devices. The most extensive adoption of wearable technologies is in the health sector (Mesut, 2015). According to Akshay, Venkatesh, and Kumar (2016), wearable healthcare gadgets offers much promise to improve healthcare service delivery for both patients and healthcare service providers these devices facilitate constant monitoring and data collection which are used in developing a pattern of patient behavior useful in healthcare service delivery.

Leonard, Silverman, Sherpa,Naegle, Kim, Coffman and Ferdschneider (2017), found out that wearable health interventions blended well with mobile health in management and treatment of ailments. Wearable sensor bands aided in tracking heightened emotions among users. Management of thoughts and feelings triggered by the immediate environment can be monitored consistently using wearable mobile health technologies. Wearable health devices having been recently introduced in the market have opened avenues for treatment of chronic illnesses through close monitoring and treatment. The devices are capable of doing instant assessment of patients' conditions and are empowered with several biosensors to transmit real-time information to be used when prescribing treatments (Dias and Cunha, 2018).According to Dinh-Le, Chuang, Chokshi, and Mann (2019) wearable health technology is instrumental in enhancing transparency between patients and chronic condition management in healthcare facilities. Wearable health gadgets facilitates movement of data from patients to doctors(Greiwe and Nyenhuis 2020). The author argues that they help in tracking patients' health progress thus empowering them to be managers of their own health. The scholar claims that wearable health devices are capable of transmitting crude responses signaling users to either halt their operations or proceed. Therefore it helps in preventing unforeseen health risks associated with lack of monitoring and control. Majority of wearable

health devices generate accurate personal wellness reports which aid in health coaching and guidance towards set health goals(Greiwe and Nyenhuis, ibid).

Table 6: Analysis of Variance on Telemedicine and Service Delivery using SPSS version 25.0.0.0

Model		Sum of Squares	Df	Mean Square	F	p-Value
1	Regression	46.455	1	46.455	156.176	.000[a]
	Residual	49.675	167	.297		
	Total	96.130	168			

A Predictors: (Constant), Telemedicine

B Dependent Variable: Service delivery

Research data (2020)

Analysis of variance determined whether there was significant effect of telemedicine on health care service delivery. A p value of 0.000 < 0.05 shows significance of telemedicine in service delivery

Table 7: Analysis of Variance on Mobile Health and service delivery using SPSS version 25.0.0.0

Model		Sum of Squares	Df	Mean Square	F	p-Value
1	Regression	78.329	1	78.329	734.833	.000[a]
	Residual	17.801	167	.107		
	Total	96.130	168			

A Predictors: (Constant), Mobile health

B Dependent Variable: Service delivery

Source: Research data (2020)

Analysis of variance was used to determine whether there was significant effect of mobile health on health care service delivery. A p value of 0.000 < 0.05 indicates there was significant positive effect of mobile health on health care service delivery.

Table 8: Analysis of Variance on Wearable Healthcare Technology and service delivery

Model		Sum of Squares	Df	Mean Square	F	p-Value
1	Regression	71.448	1	71.448	483.408	.000[a]
	Residual	24.683	167	.148		
	Total	96.130	168			

A Predictors: (Constant), Wearable healthcare technology

B Dependent Variable: Service delivery

Source: Research data (2020)

Analysis of variance was used to indicate whether there was significant effect of wearable healthcare technology on service delivery. A p value of 0.000< 0.05 indicates that there was significant positive effect of wearable healthcare technologies on health care service delivery.

Table 9: Analysis of coefficient using SPSS 25.0.0.0

Model		Unstandardized Coefficients		Standardized Coefficients	T	p-Value
		B	Std. Error	Beta		
1	(Constant)	-0.552	0.137		-4.018	0.000
	Telemedicine	0.176	0.075	0.066	2.347	0.012
	Mobile health	0.185	0.069	0.122	2.681	0.043
	Wearable healthcare technology	0.426	0.082	0.376	5.172	0.000

a Dependent Variable: Service delivery

Source: Research data (2020)

Table 9 shows results of analysis of coefficients of study variables using the model;

$y = -0.552 + 0.176X_2 + 0.185X_3 + 0.426X_4$

A unit increase in telemedicine leads to 0.176 units increase in health care service delivery holding other factors constant. A unit change in mobile health causes 0.185 units increase in health care service delivery when other variables remain the same. Health care service delivery increases by 0.426 units when wearable healthcare technology changes by a unit, other factors being constant. At 5% level of significance telemedicine had p value of $0.012 < 0.05$. The hypothesis "telemedicine has no significant effect on service delivery" was rejected. Mobile health had a p value of $0.043 < 0.05$ hence a rejection of the hypothesis "mobile health has no significant effect on health care service delivery". Wearable healthcare technologies had a p value of $0.000 < 0.05$ hence rejection of the hypothesis, "wearable healthcare technologies have no significant effect on service delivery.

CONTRIBUTION

The management of private hospitals benefits from the findings and recommendations in area of investment in information communication technology. Technology adds value to the work of employees in terms of efficiency in the delivery of optimal treatment and care to the patients. Internet networks and computers play a key role in facilitating use of telemedicine, mobile health and wearable healthcare technologies. It is an opportunity for communication and internet service providers to invest in modern effective equipment and systems which can facilitate efficient use of their services by the healthcare providers. Communication firms are obliged to engage in research and development towards development of advanced information communication technology healthcare systems. In addition the firms need to procure the best equipment for healthcare service provision. The study is important to the government in formulation of policies to establish public private partnerships in healthcare so as to realize the global millennium development goal of universal healthcare. The government can also use the research to identify best approaches towards involving the private healthcare providers as government's agents of quality healthcare. The findings from the current study calls for government's intervention in subsidizing the high cost of procuring modern information communication technology health care equipment for use in hospitals across the country. The study recommends that members of the society being healthcare beneficiaries should be sensitized on the importance of embracing use of technology in accessing healthcare services in hospitals.

CONCLUSION

Each of the technological tools including telemedicine, mobile health and wearable healthcare technology are important in ensuring quality in health care service delivery. The tools are supported by use of advanced technology, effective medication, qualified and competent human resource and sufficient doctor-patient ratio, effectiveness, efficiency and affordability of medical services. There is need for a comparative study on the health care service in faith-based healthcare institutions and Non-governmental organizations' operated healthcare institutions as a result adoption of information communication technology. The hospital management should procure equipment and install infrastructure necessary in treatment and management of chronic illnesses. Research can be replicated focusing on other information Communication technology innovations and a targeting hospital patients

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